



Committee on  
Climate Change

**Independent** advice to government on building a  
low-carbon economy and preparing for climate  
change

# Greenhouse gas removals in the CCC reports on Biomass and Land Use

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# Biomass in a Low-Carbon Economy

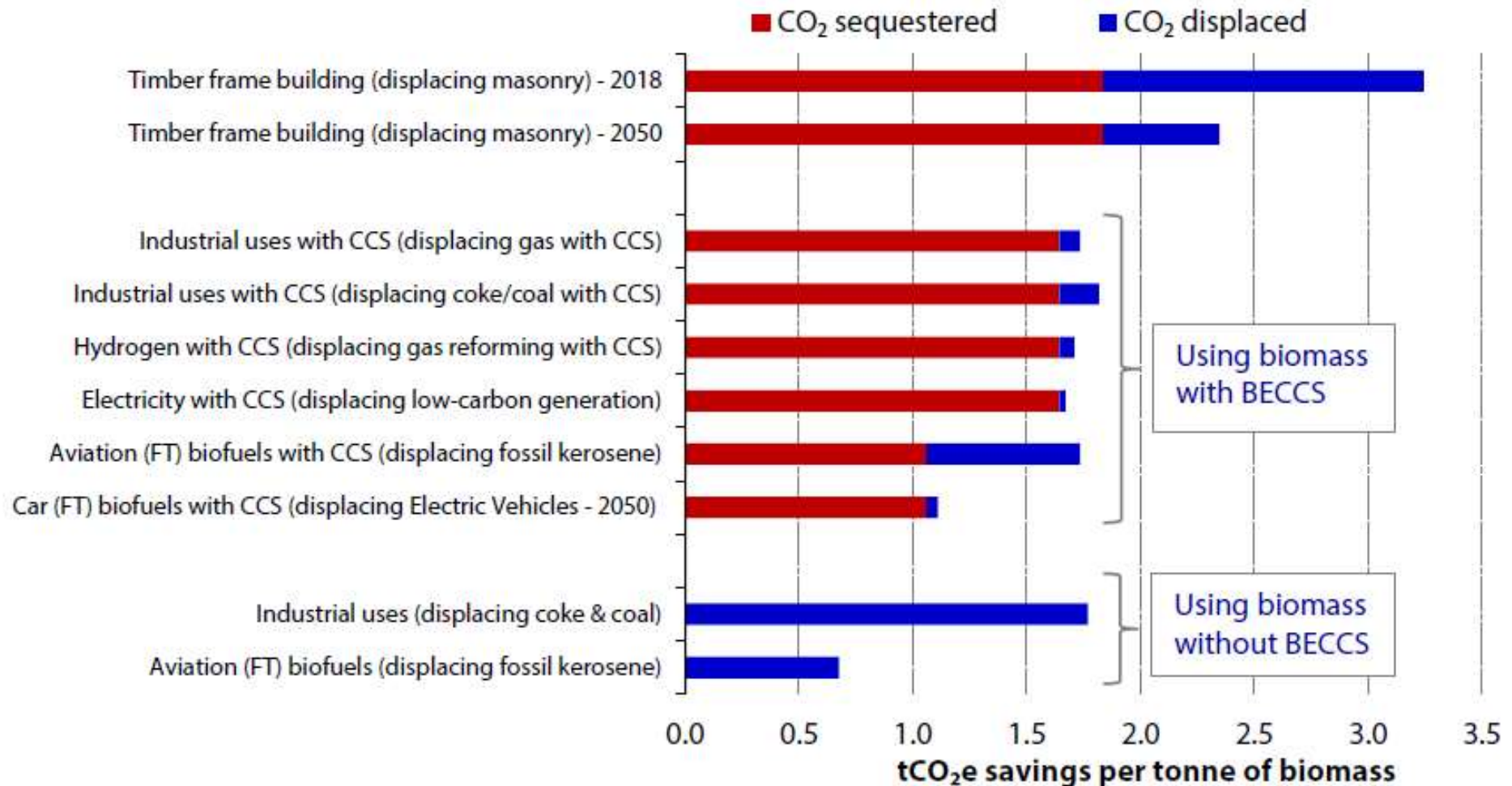


Update to our 2011 Bioenergy Review

- What is biomass and why is it important?
- When is biomass low-carbon and sustainable?
- Sustainability governance for imported biomass
- Future sustainable supply
- What is the role of biomass in meeting UK carbon targets?

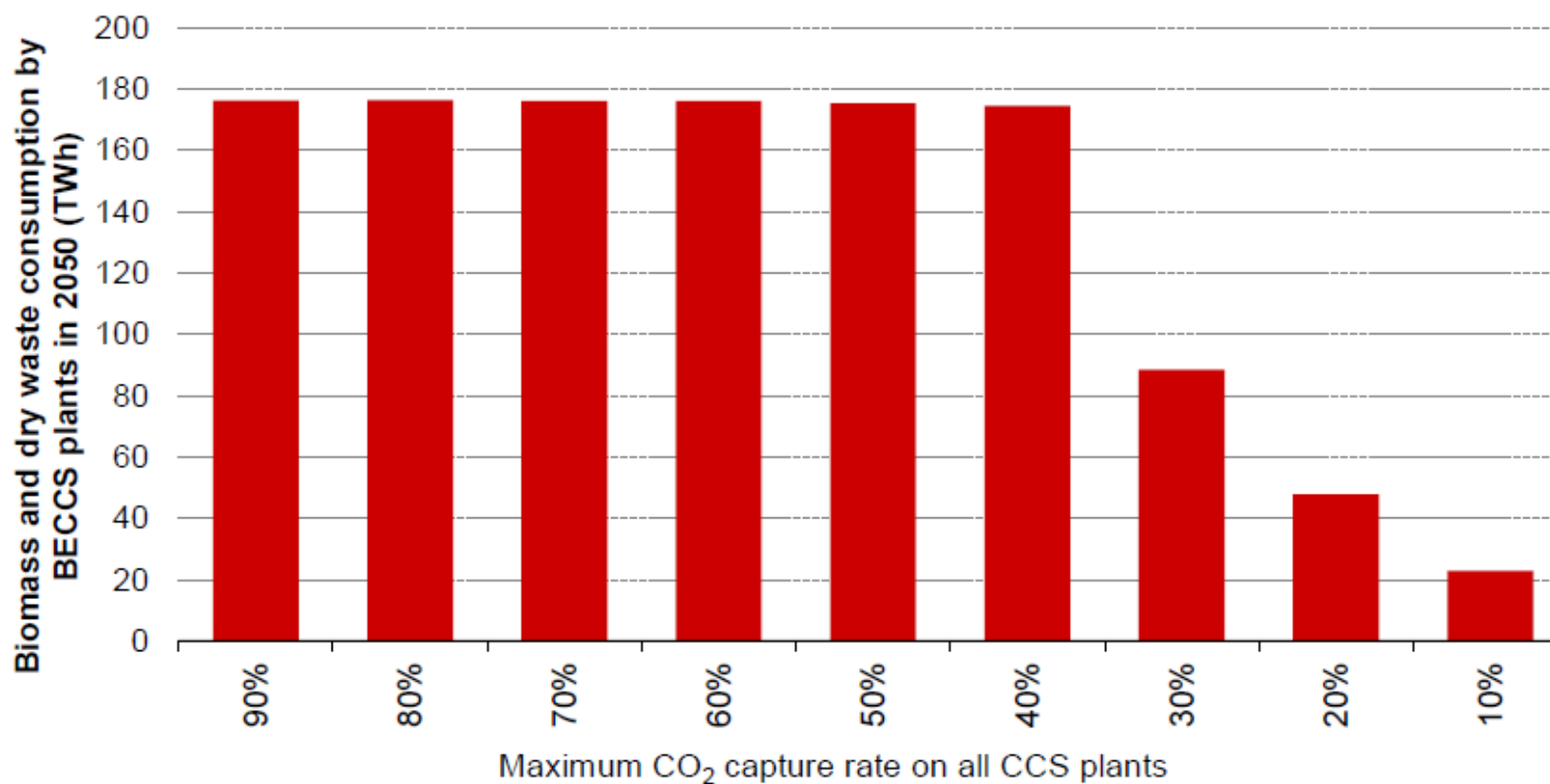
# It is best to sequester bio-carbon where feasible – in buildings or via BECCS

**Figure 5.2. Estimated GHG abatement across different biomass applications**



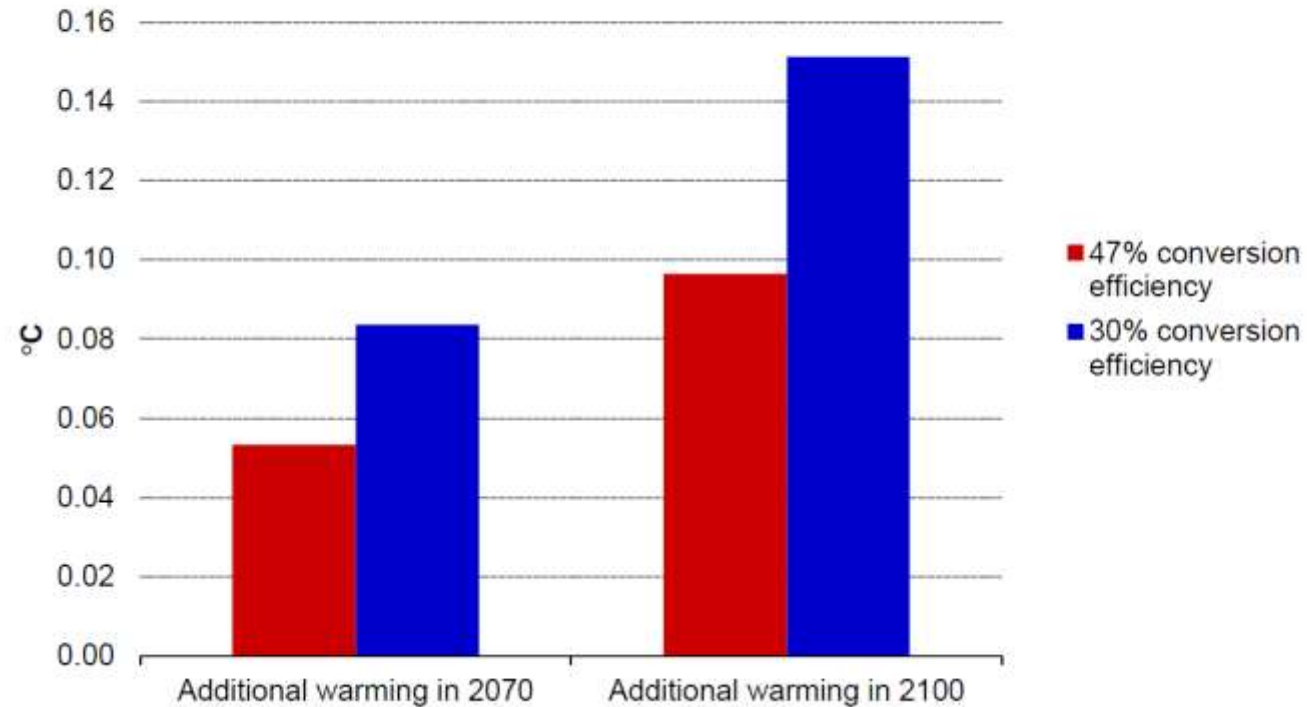
How confident are we that BECCS gives more emissions savings than non-BECCS bioenergy uses? Very!

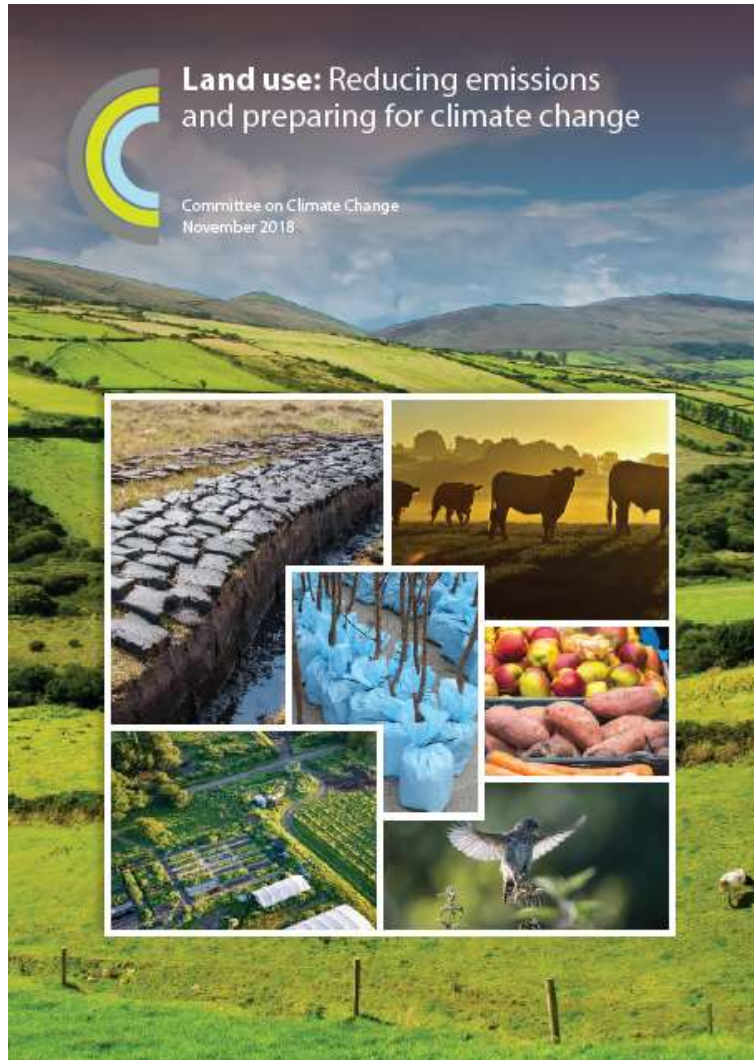
**Figure 5.5.** BECCS uptake in 2050 in ESME as a function of CO<sub>2</sub> capture rates



Aviation will continue to need hydrocarbon fuels, but their production is not a good use of biomass (without CCS) and would lead to higher global emissions than BECCS

**Figure 5.6.** Implications for the climate of carbon-inefficient biomass use





# Land Use

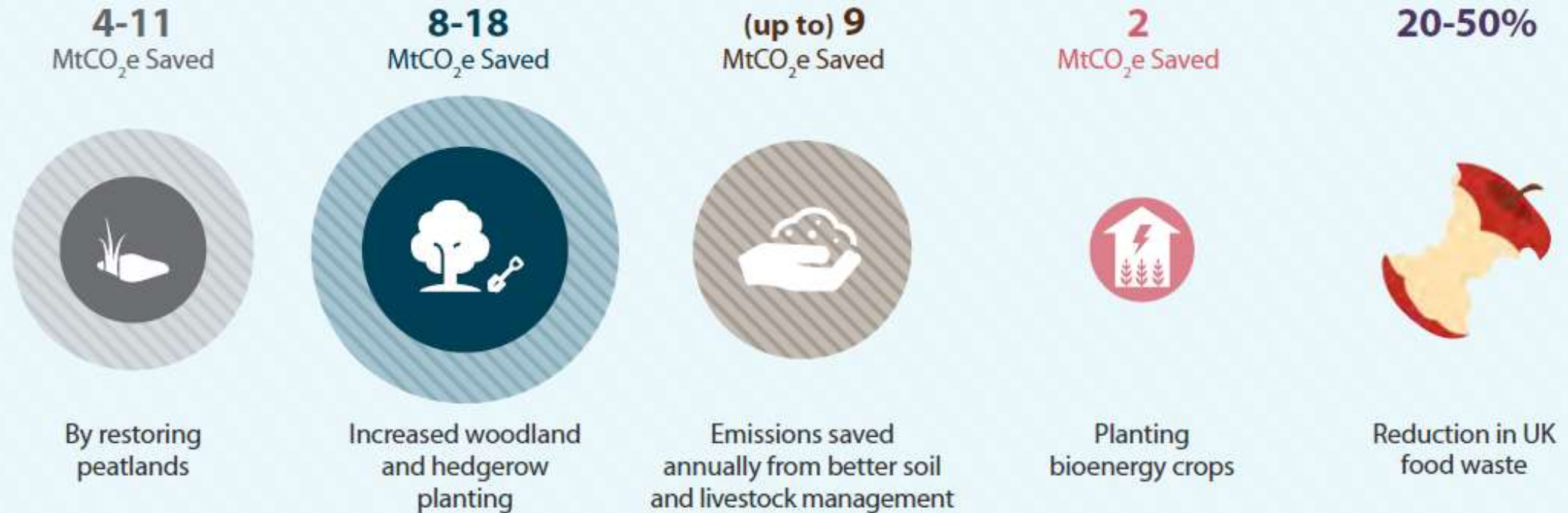
We recently published a joint report between the Mitigation and Adaptation parts of the CCC on Land Use

- How land can be used to achieve greenhouse gas reduction goals
- Building resilience to climate change through land-use change
- Transitioning to alternative land uses

# Improving land use can lead to reduced emissions and increased carbon sequestration

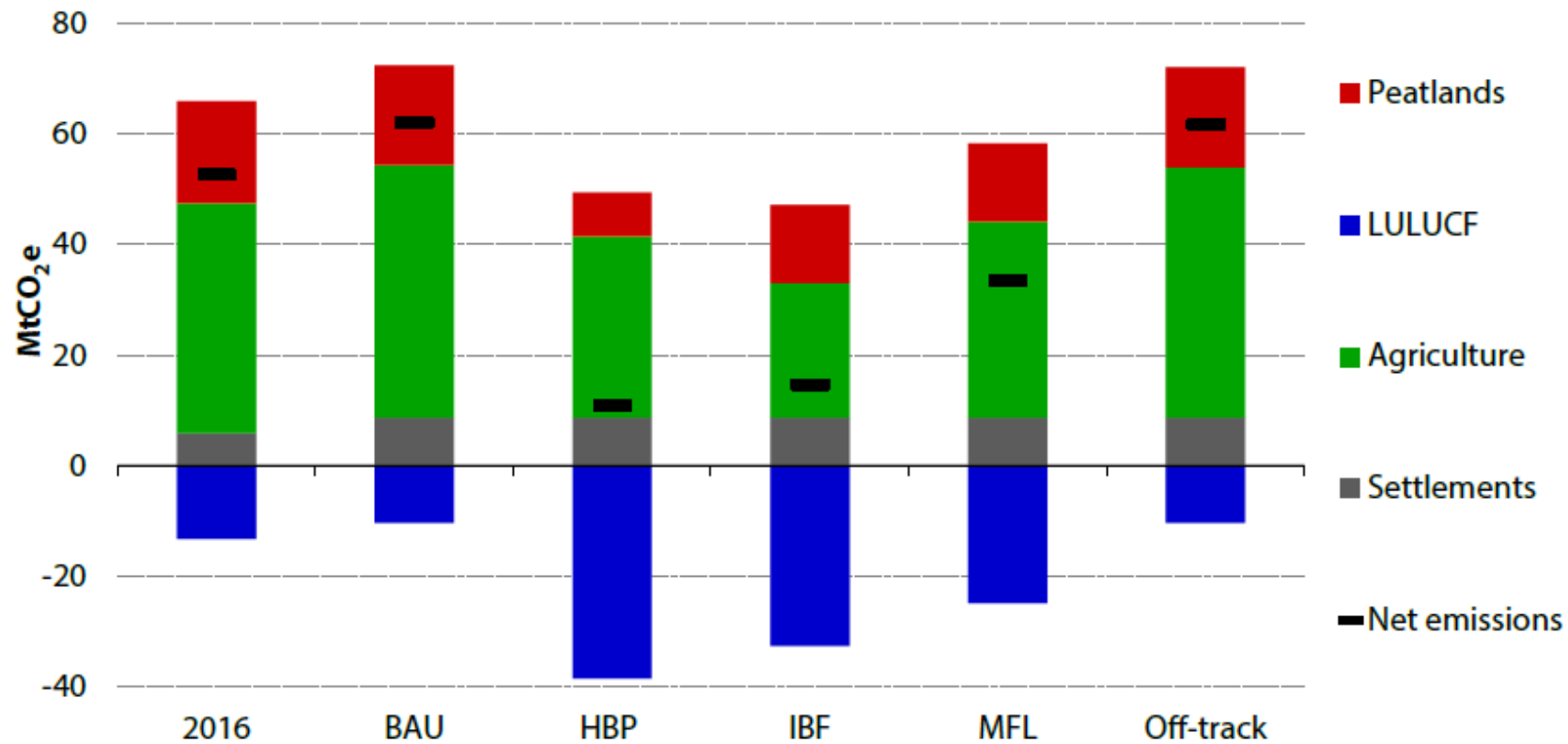
## The emissions benefits of acting now by 2050

The combination of measures required to reduce emissions can lead to long-term benefits. Many of these accrue over time:



# There is significant GGR potential in afforestation and peatland restoration

**Figure 2.6.** Net GHG emissions under different land use scenarios, 2050





# Afforestation requires near-term action to reap long-term benefits

**Figure 2.9.** Net carbon sequestration of high ambition of tree planting by type of forest, 2017-2100

